

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions,
and listings, of claims in the application.

LISTING OF CLAIMS:

Claim 1. (currently amended)

Sprinkler apparatus comprising:

2 a base adapted for attachment to a sprinkler assembly,

a nozzle mounted on said base,

4 means to supply liquid under pressure to the nozzle,

said nozzle having a passage adapted to provide a
6 liquid jet of a generally predetermined cross-sectional
configuration, and

8 means defining a reflector surface disposed to be
impacted by said liquid output jet from the nozzle,

10 said reflector surface being adapted ~~and contoured to~~
positioned to intercept and reflect said liquid jet ~~[[in]]~~
12 into a spray to an area to be sprayed, said spray being of
generally predetermined cross-sectional configuration generally
14 similar to the cross-sectional configuration of said liquid jet,

whereby a spray pattern of a generally predetermined
16 cross-sectional configuration from the reflector surface is
applied to the area to be sprayed.

Claim 2. (original)

Apparatus according to Claim 1, wherein said
2 nozzle and reflector surface are defined on a unitary nozzle
device that is force-fitted into the base.

Claim 3. (original)

Apparatus according to Claim 2, wherein said
2 nozzle device defining the nozzle and reflector surface is
adapted by edge portions thereof to be snapped-into opposed
4 slots in an upper portion of the base.

Claim 4. (original)

Apparatus according to Claim 1, wherein:

2 the reflector surface is contoured and adapted to
split said liquid jet to cause the reflected spray to be
4 evenly distributed on both sides of a predetermined area
to be sprayed.

Claim 5. (original)

Apparatus according to Claim 1, wherein the
2 surface configuration of the reflector is convex in two
directions substantially at right angles to each other.

Claim 6. (currently amended)

Apparatus according to Claim 1, wherein:

2 variations in the surface of ~~the~~ a generally convex
reflector surface reflect respective portions of spray at
4 respective portions of a predetermined spray pattern to
respective portions of an area to be sprayed.

Claim 7. (withdrawn)

Apparatus according to Claim 1, wherein

2 said reflector surface is on a flexible metal member mounted
on said base, and further comprising:

4 a threaded member threadedly mounted in the base and
positioned to engage the reflector and alter its configuration
6 by rotation of the threaded member.

Claim 8. (currently amended)

Sprinkler apparatus comprising:

- 2 a base adapted for attachment to a sprinkler assembly,
- a nozzle mounted on said base,
- 4 said nozzle having a passage adapted to provide a liquid
jet of a generally rectilinear cross-sectional configuration,
- 6 means to supply liquid under pressure to the nozzle,
- a reflector surface disposed to be impacted by said
8 liquid output jet from the nozzle,
- said nozzle and reflector surface being defined on a
10 unitary nozzle device which is force-fitted into the base,
- said reflector surface being adapted and contoured to
12 reflect said liquid jet in a spray to an area to be sprayed,
said spray being of cross-sectional configuration generally
14 similar to the rectilinear cross-sectional configuration of
said liquid jet,

(continued)

Claim 8. (currently amended - continued)

16 ~~-a-generally--convex-~~ the reflector surface having
variations in the surface to reflect respective portions of
18 spray at respective inclinations from the reflector to define
respective portions of a predetermined spray pattern to
20 respective portions of an area to be sprayed,

 whereby a spray pattern of a predetermined rectilinear
22 cross-sectional configuration from the reflector surface is
applied to the area to be sprayed.

Claim 9. (original)

 Apparatus according to Claim 8, wherein the surface
2 configuration of the reflector is generally convex in two
directions substantially at right angles to each other.

Claim 10. (original)

Apparatus according to Claim 9, wherein variations
2 in the general convex contour of the reflector surface to
effect respective inclinations of spray portions, may be
4 determined (a) empirically, (b) preferably by utilization
of computer equipment and insertion thereof of data
6 including geometric relations of parts, angles, and dimensions.

Claim 11. (original)

Apparatus according to Claim 8, wherein the reflector
2 surface is defined on a flexible member on the apparatus,
and further including:

4 a threaded member in an opening in the apparatus for
adjustment of the configuration of the reflector.

Claim 12. (currently amended)

Apparatus according to Claim 8, wherein a step shoulder
2 is defined in a wall portion of the nozzle apparatus adjacent
an outlet end of the nozzle passage to deflect the liquid
4 jet from ~~[[the]]~~ an innermost portion of the reflector
surface to prevent interference by inaccurate spray from
6 ~~[[an]]~~ the innermost reflector surface portion.

Claim 13. (currently amended)

Apparatus according to Claim 8, wherein the nozzle
2 and reflector surface are defined on ~~[[a]]~~ the unitary
nozzle device having portions thereof adapted to be snapped
4 into an upper portion of the base to mount the nozzle device
on the base.

Claim 14. (currently amended)

Sprinkler apparatus comprising:

2 a base adapted for attachment to a sprinkler and
for liquid passage therethrough,

4 a unitary nozzle device mounted on said base,

6 said unitary nozzle device comprising an integrally
formed nozzle passage and an integral reflector surface
disposed in spaced-apart confronting relation, said reflector
8 surface being disposed to be impacted by a liquid jet from
the nozzle passage,

10 said ~~integral~~ unitary nozzle device providing
dimensional accuracy as between the nozzle and the reflector
12 surface to enable accurate performance of the nozzle device
and accurate repeatability in manufacture of the device,

14 said nozzle passage being adapted to provide [[a]]
the liquid jet [[of]] in a generally predetermined cross-
16 sectional configuration, and

(continued)

Claim 14. (currently amended - continued)

18 said reflector surface being contoured and adapted
to reflect said liquid jet in a spray to an area having a
cross-sectional configuration to be sprayed which is generally
20 similar in cross-sectional configuration to that of said
liquid jet,

22 whereby a spray pattern of a substantially
predetermined cross-sectional configuration is applied to an
24 area to be sprayed.

Claim 15. (original)

2 Apparatus according to Claim 14, wherein the nozzle
is adapted and contoured to reflect the liquid jet from the
nozzle in a reflected spray pattern and a cross-sectional
4 configuration generally similar to that of the liquid jet
from the nozzle.

Claim 16.. (currently amended)

~~Apparatus according to Claim 14, wherein~~

Sprinkler apparatus comprising:

a base adapted for attachment to a sprinkler and for
liquid passage therethrough,

a unitary nozzle device mounted on said base,

said unitary nozzle device comprising an integrally
formed nozzle passage and an integral reflector surface disposed
in spaced-apart confronting relation, said reflector surface
being disposed to be impacted by a liquid jet from the nozzle
passage,

said unitary nozzle device providing dimensional accuracy
as between the nozzle and the reflector surface to enable
accurate performance of the nozzle device and accurate
repeatability in manufacture of the device,

said nozzle passage being adapted to provide the liquid
jet in a generally predetermined cross-sectional configuration,

(continued)

Claim 16. (currently amended - continued)

18 said reflector surface being contoured and adapted to
reflect said liquid jet in a spray to an area having a cross-
20 sectional configuration to be sprayed which is generally similar
in cross-sectional configuration to that of said liquid jet, and

22 a step shoulder [[is]] defined in a wall portion of
the nozzle device adjacent an outlet end of the nozzle passage
to deflect the liquid jet from [[the]] an innermost portion
24 of the reflector surface to prevent interference by inaccurate
spray from [[an]] the innermost reflector surface portion[.],

26 whereby a spray pattern of a substantially predetermined
cross-sectional configuration is applied to an area to be
28 sprayed.

Claim 17. (currently amended)

Apparatus according to Claim 14, wherein said nozzle
2 device defining the nozzle and reflector surface ~~-are-defined-~~,
is adapted ~~-for-~~ by edge portions thereof to be snapped into
4 opposed slots in an upper portion of the base to mount the
nozzle device on the base.

Claim 18. (withdrawn)

Apparatus according to Claim 14, wherein the reflector
2 surface is defined on a flexible member on the apparatus,
and further including:

4 a threaded member in an opening in the apparatus for
adjustment of the configuration of the reflector.

Claim 19. (original)

Apparatus according to Claim 14, wherein said nozzle
2 device is force-fitted into an opening in the base to mount
the device on the base in sealing engagement therewith.

Claim 20. (currently amended)

~~Apparatus according to Claim 14, wherein-~~

2 Sprinkler apparatus comprising:

4 a base adapted for attachment to a sprinkler and for
liquid passage therethrough,

a unitary nozzle device mounted on said base,

6 said unitary nozzle device comprising an integrally
formed nozzle passage and an integral reflector surface disposed
8 in spaced-apart confronting relation, said reflector surface
being disposed to be impacted by a liquid jet from the nozzle
10 passage,

said unitary nozzle device providing dimensional accuracy
12 as between the nozzle and the reflector surface to enable
accurate performance of the nozzle device and accurate
14 repeatability in manufacture of the device,

a generally circular lower portion of the nozzle device
16 [[is]] being force-fitted into a circular opening in the base,
and wherein an interior wall of the base provides a wall of the
18 nozzle passage[.] ,

Claim 20. (currently amended - continued)

20 said nozzle passage being adapted to provide the liquid
 jet in a generally predetermined cross-sectional configuration,
 and

22 said reflector surface being contoured and adapted to
 reflect said liquid jet in a spray to an area having a cross-
24 sectional configuration to be sprayed which is generally
 similar in cross-sectional configuration to that of said liquid
26 jet,

whereby a spray pattern of a substantially predetermined
28 cross-sectional configuration is applied to an area to be
 sprayed.

Claim 21. (original)

Apparatus according to Claim 14, wherein
2 variations in the generally convex contour of the reflector
surface to effect respective inclinations of spray portions,
4 may be determined (a) empirically, (b) preferably by
utilization of computer equipment and insertion therein
6 of data including geometric relations of parts, angles,
and dimensions.

Claim 22. (original)

Apparatus according to Claim 14, and further
2 comprising:

a plurality of devices according to Claim 14
4 disposed in a plurality of respective openings in a multiple
sprinkler assembly wherein the plurality of nozzles and
6 reflector surfaces cooperate to provide an overall composite
predetermined spray area pattern.

Claim 23. (new)

Apparatus according to Claim 1, wherein said
2 reflector surface is generally planar.

Claim 24. (new)

Apparatus according to Claim 8, wherein said
2 reflector surface is generally planar.